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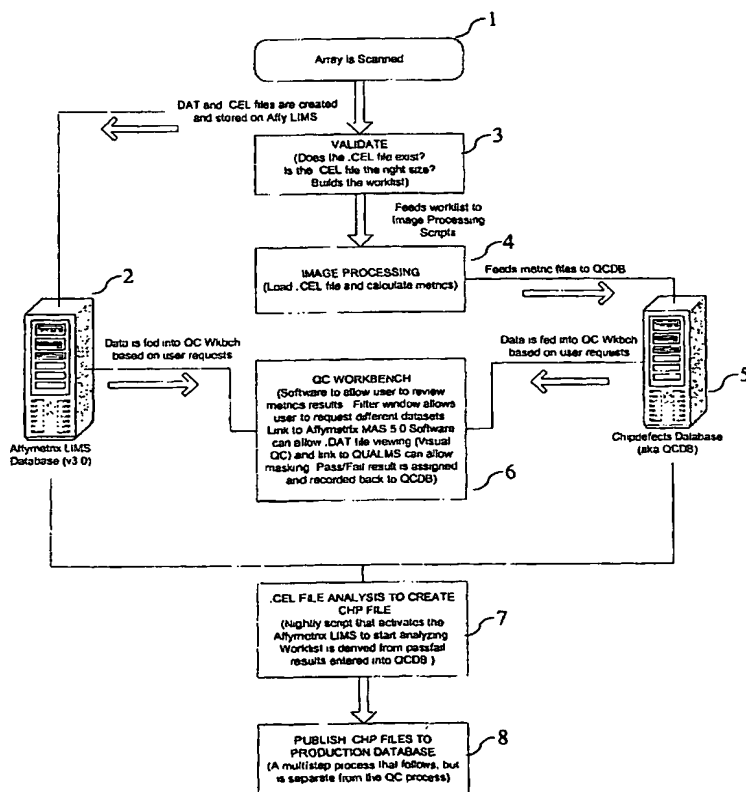
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[Continued on next page]

- (54) Title:** METHOD AND SYSTEM FOR MANAGING AND QUERYING GENE EXPRESSION DATA ACCORDING TO QUALITY



(57) Abstract: An automated system and method are provided for analyzing gene expression data obtained from a plurality of microarrays having mismatch (MM) probe pairs and perfect match (PM) probe pairs. Image data for a plurality of scanned microarrays (1) is stored in a database (2) along with a set of microarray parameters which includes one or more image processing metrics (4) for quality control (6) of the microarray and a pass/fail status of the microarray as determined by these metrics. The user can search the database records (2) according to one or more microarray parameters. The image processing metrics (4) include algorithms for removing local background effects from the probe measurements by determining a model for estimated background using PM probe values. Other image processing metrics utilize a modified Robust Multi-array Averaging (RMA) applied to PM probes to assign weights to probes for determining overall quality of a microarray.



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06K 9/00

US CL : 129

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 382/128, 129, 262, 274, 275, 305

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST, IEEE, SPIE, ACM, ProQuest, CiteSeer, ResearchDisclosure

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
AP	US 2003/0028501 A1 (BALABAN et al.) 06 February 2003 (06.02.2003), figure 1, paragraphs 33-37, 42 and 45.	1-18
AP	US 2003/0124589 A1 (PIPER) 03 July 2003 (03.07.2003), figures 1 and 4, paragraphs 94 and 95.	1-18
AP	US 2003/0093227 A1 (STOUGHTON et al.) 15 May 2003 (15.05.2003), paragraphs 59, 63, 65, 87, 93, 98 and 104-110.	19-26
AP	US 2002/0110267 A1 (BROWN et al.) 15 August 2002 (15.08.2002), paragraphs 4, 10, 21, 49 and 57.	19-26
YP		2-9, 11-18
YE	US 2004/0019466 A1 (MINOR et al.) 29 January 2004 (29.01.2004), figure 10, paragraphs 116 and 126-132	1-18
YE	US 2003/0171876 A1 (MARKOWITZ et al.) 11 September 2003 (11.09.2003), figures 1-4, paragraphs 28, 42-45, 58, 60-67, 114, 118, 177, 184-190 and 205.	1-18
YP	US 2003/0099973 A1 (WANG et al.) 29 May 2003 (29.05.2003), figures 2-4 and 7B, paragraphs 39, 40, 49-51 and 66.	1-18

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